

## What You Need to Know About Bone Health

Not only do bones provide your body's structural foundation, they also protect organs, anchor muscles and store calcium. While some bone loss is common as you age, it doesn't have to be inevitable. There are a number of factors that can help improve bone health and reduce the risk of osteoporosis.



### Osteoporosis Facts

Osteoporosis is a disease characterized by fragile, porous bones that break easily. It is estimated that nearly 50% of all women will have an osteoporosis-related fracture at some point in their lives.<sup>1</sup> The best defense against osteoporosis begins in childhood with a well-balanced diet, including plenty of calcium and Vitamin D, to help build strong bones. However, it's never too late to take steps to improve bone health.

#### National Osteoporosis Foundation's Five Steps to Bone Health and Osteoporosis Prevention<sup>1</sup>

1. Get your daily recommended amounts of calcium and vitamin D. (See tips on increasing calcium intake on reverse side.)
2. Engage in regular weight-bearing exercise — at least 30 minutes per day of whatever activity you like best. Walking, jogging, dancing, playing sports and working out at the gym (treadmill, elliptical machines, etc.) are all great options.
3. Avoid smoking and excessive alcohol.
4. Talk to your healthcare provider about bone health.
5. When appropriate, have a bone density test and consider medication if indicated.

### Soy's Role in Bone Health

Many soyfoods such as fortified soymilk provide high-quality protein and abundant calcium and vitamin D, which are all important nutrients for bone health. The calcium in soymilk has been shown to be absorbed by the body just as readily as dairy calcium,<sup>2</sup> making soymilk an excellent choice for those who prefer to avoid dairy or are interested in the benefits of a plant-based diet.

Soyfoods are also a source of isoflavones, natural plant compounds that may play a role in bone health. Some scientific studies have shown promise for soy's role in helping to reduce the risk of osteoporosis. However, some recent clinical trials have not supported soy's skeletal benefits.<sup>3,4</sup> More research is needed to draw clear conclusions about the effect of soy isoflavones on bone health. In the meantime, calcium-fortified soyfoods such as soymilk remain a wise choice because of their calcium, protein and vitamin D content.



## Recommended Calcium and Vitamin D Intakes

A healthy diet with adequate calcium and vitamin D (which helps increase calcium absorption) and regular physical activity are essential to achieving and maintaining bone strength, and may reduce the risk of osteoporosis.<sup>5</sup>

Daily Calcium and Vitamin D Recommendations				
AGE	CALCIUM	FOUND IN	VITAMIN D	FOUND IN
Children 1 to 3 years*	500 mg	1 cup milk or soymilk (300 mg) and 6 oz yogurt (200–250 mg)	400 IU	4 cups milk or soymilk or 2 cups milk or soymilk (200 IU) plus 200 IU Vitamin D supplement <sup>6</sup>
Children 4 to 8 years*	800 mg	2 cups milk or soymilk (600 mg), 1 cup cooked broccoli (70 mg), ½ cup pudding (150 mg)	400 IU	1 tsp cod liver oil (400 IU)
Preteens/Teens 9 to 18 years*	1300 mg	2 cups milk or soymilk (600 mg), 3 oz cheese (600 mg) and ½ cup edamame (130 mg)	400 IU	3 oz canned tuna (154 IU) plus 2.5 cups milk or soymilk (250 IU)
Adults 19 to 50 years†	1000 mg	1 cup calcium-fortified juice (250 mg), 1 cup milk/soymilk (300 mg), 1 cup cooked spinach (240 mg), ½ cup firm tofu (200 mg)	400–800 IU	3 oz sockeye salmon (794 IU)
Adults 51+ years†	1200 mg	4 cups milk or soymilk	800–1,000 IU	2 cups milk or soymilk (200 IU) plus 600–800 IU Vitamin D supplement

Data drawn from USDA National Nutrient Database for Standard Reference, Release 22 (2009).

\* Recommendations from the American Academy of Pediatrics (vitamin D)<sup>6</sup> and from the National Academy of Sciences (calcium).<sup>7</sup>

† Recommendations from the National Osteoporosis Foundation, 2002.

## Tips for Increasing Calcium Intake

It's not as hard as you might think to meet your calcium needs. Here are some easy ways to increase your calcium intake throughout the day:

- Replace your post-workout glass of water with a glass of milk or soymilk. Not only will you get calcium, but you'll also get a beneficial dose of protein to aid in muscle recovery.
- Swap out iceberg lettuce for calcium-containing greens like spinach or kale.
- Try calcium-rich tofu instead of meat in stir-fries, casseroles and other main dishes.
- Choose calcium-fortified juices over fruit drinks or sodas.
- Think beans! Beans are a somewhat surprising source of calcium — with beans such as edamame (fresh green soybeans), navy beans, white beans and chickpeas all providing a significant amount.
- Conquer your afternoon chocolate cravings with a glass of chocolate milk or soymilk.

1 National Osteoporosis Foundation Facts on Osteoporosis, <http://www.nof.org/osteoporosis/diseasefacts.htm>, accessed September 17, 2010.

2 Zhao Y, Martin BR, Weaver CM. Calcium bioavailability of calcium carbonate fortified soymilk is equivalent to cow's milk in young women. *J Nutr.* 2005;135(10):2379-82.

3 Brink E, Coxam V, Robins S, Wahala K, Cassidy A, Branca F. Long-term consumption of isoflavone-enriched foods does not affect bone mineral density, bone metabolism, or hormonal status in early postmenopausal women: a randomized, double-blind, placebo-controlled study. *Am J Clin Nutr* 2008; 87:761-70.

4 Kenny AM, Mangano KM, Abourizk RH, Bruno RS, Anamani DE, Kleppinger A, et al. Soy proteins and isoflavones affect bone mineral density in older women: a randomized controlled trial. *Am J Clin Nutr* 2009;90:234-42.

5 U.S. Food and Drug Administration. Food labeling: health claims; calcium and osteoporosis, and calcium, vitamin D, and osteoporosis. <http://www.fda.gov/Food/LabelingNutrition/LabelClaims/HealthClaimsMeetingSignificantScientificAgreementSSA/default.htm>, accessed September 17, 2010.

6 Wagner CL, Greer FR; American Academy of Pediatrics Section on Breastfeeding; American Academy of Pediatrics Committee on Nutrition. Prevention of rickets and vitamin D deficiency in infants, children, and adolescents. *Pediatrics* 2008;122:1142-1152.

7 Dietary Reference Intakes for Calcium, National Academy of Sciences, Institute of Medicine, Food and Nutrition Board, 1997.